REMARKS

Favorable reconsideration is respectfully requested of the rejections set forth in the outstanding Advisory Action and the preceding Office Action.

The Advisory Action appears to accept that zinc, as used in the method of Johnson, is a fluxing agent and suggests that if the claims currently rejected over the Johnson reference, claims 1-6, 9-10 and 16, were to exclude addition of a fluxing agent, they would be patentable over the Johnson reference. It is respectfully submitted that claims 1-6, 9-10 and 16 as presented originally do indeed exclude addition of a fluxing agent. Claim 1 calls for production of "treated coal that is free of added fluxing agent" and burning that treated coal. Thus, claim 1 as originally presented calls for burning treated coal that is free of added fluxing agent. However, to emphasize this point, applicant has amended claim 1 to underscore that what is burned is coal that is free of added fluxing agent. Johnson does not refer to or suggest burning coal that is free of added fluxing agent. To the contrary, Johnson teaches burning coal that CONTAINS added fluxing agent.

Claims 2-6 and 9-10 depend from claim 1 and so contain the limitation in question as well. Moreover, claims 9 and 10 are methods that "consist essentially of" the steps referred in those claims. Claims that "consist essentially of" certain steps contain only the steps identified and no others that would effect the novel and basic characteristics of the invention. It is clear throughout the specification that a basic and novel characteristic of this invention is the elimination of added fluxing agent. This is stated repeatedly and the surprising advantages of this exclusion are identified in the specification. Thus, claims 9 and 10 exclude addition of fluxing agents and so clearly distinguish over the Johnson reference.

New claims 17-21 depend directly or indirectly from claim 1 and further distinguish over the Johnson reference. For example, new claim 17 states that the burning of the treated coal that is free of added fluxing agent produces an ash of INCREASED melting point and that contains the calcium ferrite. By contrast, the point of a fluxing agent, as pointed out in the specification (see the first paragraph of the Detailed Description), is to REDUCE the melting point of the ash. New claims 18 and 19 call for the method to be carried out without soot blowers or water lances. As noted in the specification, the ability to carry out the method without soot blowers and water lances is one of the benefits of the present invention. It is not

mentioned in the Johnson reference. New claim 20 explicitly states that the method is carried out without added fluxing agent, thus including explicitly the feature the Examiner has identified. New claim 21 calls for the ash to be darker than if produced without addition of the composition. Thus, it is submitted that all pending claims distinguish patentably over the Johnson reference.

With respect to the Buecker et al. article, the Advisory Action addresses the question only of whether the article is prior art and not Applicant's substantive discussion of its disclosure. As noted in Applicant's previous response, the Buecker et al. article reports on a method of ADA Environmental Solutions, which appears to be the method of the Johnson patent discussed above, which was assigned to ADA Environmental Solutions. This would explain the results reported by Buecker et al. and the reference by Buecker et al. to the ADA compositions included "a mixture of iron oxides and stabilizing chemicals . . ." See page 2 of 4, last full paragraph, of the Beucker et al. print-out.

The correct interpretation of the prior art requires that it be considered in context. Thus, even were the Buecker et al. article prior art, the subject claims still are patentable over the Buecker et al. article for at least the reasons addressed above with respect to the Johnson patent, including the fact that the Johnson methods employed compositions that included an added fluxing agent (zinc). Accordingly, the Buecker et al. article does not render any of the subject claims unpatentable.

Although the Examiner has not stated why this rejection based on the Buecker article has been maintained over Applicant's arguments set forth in the previous response, it appears that establishment of zinc as a fluxing agent per the discussion above should satisfy whatever concerns remain with respect to the Buecker et al. article. Therefore, it is submitted that all pending claims define patentably over the Buecker et al. article.

In the Advisory Action, the Examiner did not mention the Radway et al. patent, but claims 1-10 and 16 were rejected over it in the previous Office Action. To the extent the rejection is maintained, favorable reconsideration is also requested of the rejection of claim 1-10 and 16 as being obvious over the Radway et al. patent.

In the previous Office Action, the Examiner argued that the Radway et al. patent simply teaches adding iron oxide to coal and combusting the coal and that this "is all that Applicant does." However, as explained in the preliminary remarks submitted prior to first Action in this

case and repeated in the previous response, the method of the Radway et al. patent, as described in the patent's specification, defined in the patent's claims and illustrated in the patent's working examples, is the standard prior art technique over which the present invention provides an improvement –it is the coating of furnace wall ash with a darkening agent. For example, the Radway et al. Abstract states, "The method involves exposing the walls to a darkening agent, or a combination of a darkening agent and a fluxing agent." And, again, in the Field of the Invention, Radway et al. state that "the invention relates to a darkening agent for darkening highly reflective deposits of thin ash . . ." And, again, in the Summary of the Invention, Radway et al. state, "The method involves exposing the walls to a darkening agent, or a combination of a darkening agent and a fluxing agent."

Although Radway et al., in passing, mention that the darkening agent alone may be used to darken the ash, the examples teach only the use of the darkening agent with a fluxing agent. The fluxing agent allows the darkening agent to adhere to the ash. By contrast, the method of the present invention does not involve exposing the furnace walls to a darkening agent and a fluxing agent. Moreover, as noted in the subject specifications the composition increases the efficiency of heat transfer of the furnace. The composition appears to increased such efficiency by increasing the thermal conductivity of the ash on the furnace walls. Nowhere do Radway et al. teach, suggest or realize that by eliminating the fluxing agent, surprising results contrary to the understanding of the art –that the fluxing agent may be eliminated, that such elimination results in an elimination of a need for a darkening agent, and that such elimination results in greater heat transfer efficiency—are obtained. Radway et al. further do not teach or suggest formation of calcium ferrite, as called for in the pending claims. The Radway et al. patent is directed consistently and single-mindedly to coating reflective ash build-up with a darkening agent and a fluxing agent.

Nor do Radway et al. provide any hint as to how to carry out its method (e.g., with respect to concentrations, type of iron ore, and techniques), let alone the claimed method. Radway et al. simply did not appreciate that if iron oxide were added to the coal in the proper amount, it would form calcium ferrite upon combustion of the coal, thereby obviating the need to coat white ash as it directs, and nothing in the Radway et al. patent so teaches or suggests. This surprising result is sufficient to establish patentability. Moreover, the newly added claims add further patentably distinguishing features, as discussed above.

CONCLUSION

Accordingly, in view of the foregoing, favorable reconsideration and withdrawal of the outstanding rejections, and early allowance of the subject application are earnestly solicited.

Respectfully submitted,

By: _____

Kenneth Solomon, Reg. No. 31,427
Thompson Coburn LLP
One US Bank Plaza
St. Louis, MO 63101-1693
(314) 552-6297
(314) 552-7297 (fax)
Attorneys for Applicant